

Application No.: Not Assigned  
Amdt. dated Feb. 9, 2004

### **REMARKS**

Examiner objected to claims 16-19. In line 6 of claim 16 the term "the optical signals" was objected to for lacking of antecedent basis. Applicants have amended object to term of claim 16 to correctly read "the electrical signals".

Examiner further objected to the claim 16, stating it is not clear how the IR radiation generated by the gas is semi-transparent to the gas components, as claimed in lines 6-7. Drawing attention to paragraphs 41-45, the purpose for utilizing a semi transparent is avoid measuring the temperature of the far wall or near wall in favor of measuring the temperature of the gas within the furnace. Paragraph 45 in particular defines the desired wavelength as "for which T is essentially zero for values of  $X \geq$  the distance to the far wall and for which T is nearly 1 for values of  $X \leq 2$  feet" wherein the integers X and T are defined in paragraph 44.

Examiner objected to the term "trade" in line 2 of claim 18. Claim 18 has been amended to remove the word "trade". Applicants contend inclusion the term trade in claim 18 is in error as that term appears no where else in the application. Examiner further objects to claim 18 as it appears to be stating there is only one gas component whereas claim 16 states there is a plurality of gas components. Applicants believe examiner objection is in error. Claim 18 is merely drawn to measuring a particular gas component within the plurality of gas components, wherein that particular gas component is H<sub>2</sub>O.

Examiner objected to claim 17 and 19 for being dependent upon objected base claim 16. Applicants submit claims 16 and 18 have been corrected and/or clarified to overcome Examiners objection, thereby also overcoming Examiners objection to claims 17 and 19 based upon there dependency on objected base claim 16.

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Examiner objected to Claims 16-19 under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omissions amounting to a gap between the step.

Applicants have amended base claim 16 to provide additional steps in order to clarify a method of measuring temperature according to the present invention. Applicants submit claim 16, as amended, overcomes Examiner rejection under 35 U.S.C 112, second paragraph, and claim 17-19 overcome Examiner rejection under 35 U.S.C 112, second paragraph due to their dependence on rejected base claim 16.

Examiner rejected claims 16-19 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,142,417 to Cashdollar et al in view of U.S. Patent 4,780,832 to Shah. Applicants have amended base claim 16 to provide additional step in order to clarify a method of measuring temperature according to the present invention. Applicants submit claim 16, as amended, overcome Examiners rejection under 35 U.S.C. 103(a), and claims 17-19 overcome Examiners rejection under 35 U.S.C. 103(a) due to their dependence on rejected base claim 16.

Applicants submit claim 16-19 as amended are in condition for allowance, and respectfully request timely Notice of Allowance be issued in this case.

Respectfully submitted,



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